

REMARKS

This application has been reviewed in light of the Office Action dated July 8, 2003. Claims 1-10, 21, 22, 27, and 30-35 are presented for examination. Claims 11-20, 23-26, 28 and 29 have been cancelled, without prejudice or disclaimer of the subject matter presented therein. Claims 1-10, 21, 22 and 27 have been amended to define more clearly what Applicants regard as their invention. New Claims 30-35 have been added to provide Applicants with a more complete scope of protection. Claims 1, 2 and 30-32 are in independent form. Favorable reconsideration is requested.

According to the Office Action, Claims 5-7 and 15-17 are objected to for depending from a rejected base claim, but would be allowable if rewritten in independent form. Claims 5-7 have been canceled and rewritten as new independent Claims 30-32, respectively. Since independent Claims 30-32 recite features substantially the same as those formerly recited in Claims 5-7, respectively, it is believed that Claims 30-32 are in condition for allowance.¹

Claims 1-4, 8-14 and 18-29 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,872,541 (Yoshioka et al.).

Without conceding the propriety of this rejection, cancellation of Claims 11-14, 18-20, 23-26, 28 and 29 renders their rejection moot.

With regard to the remaining independent Claims 1 and 2, Applicants offer the following comments.

1/ Claims 5-7 and 15-17 have not been canceled for purposes related to patentability.

As amended, Claim 1 recites:

“1. An electron source comprising:
a substrate;
an insulating material layer provided on the substrate, wherein the insulating material layer has a plurality of partially exposed metal oxide particles on its surface; and
an electron-emitting material and an electrode connected with said electron-emitting material, wherein said electron-emitting material and said electrode are disposed on said insulating material layer.”

Independent Claim 2, as amended, recites:

“2. An electron source comprising:
a substrate;
an insulating material layer provided on the substrate, wherein the insulating material layer has a plurality of partially exposed metal oxide particles on its surface and a plurality of enclosed metal oxide particles; and
an electron-emitting material and an electrode connected with said electron-emitting material, wherein said electron-emitting material and said electrode are disposed on said insulating material layer.”

As was pointed out in the Amendment And Request For Consideration Of Previously Cited Art (hereinafter “the previous Amendment”) filed on February 28, 2003, Yoshioka et al. teaches a substrate 4 on which an insulating layer 11 is provided, and wherein electrodes 1 and 2 are disposed on the layer 11. The electrodes 1 and 2 are comprised of low-resistance materials for use in voltage application, and an electron-emitting region 10 comprising fine particles 9 dispersed between electrodes 1 and 2 is provided (see, e.g., Fig. 8 and col. 8, lines 28-34). Col. 9, line 15 et seq. refers to an insulating layer 11 formed on substrate 4, electrodes 1 and 2 formed on layer 11, and fine particles 9 coated on an electrode gap region and arranged on the surface of the insulating layer 11 in electrode spacing L. Through a heating procedure, the fine particles 9 penetrate

into low-melting glass, resulting in being included in the layer 11 or included to an extent that at least part of a particle is exposed from the layer 11.

The Office Action apparently contends that the fine particles (9) disclosed in Yoshioka et al. correspond to partially exposed metal oxide particles of the present invention. However, as pointed out in the previous Amendment, according to Figs. 8-11 and col. 8, lines 62-64 of Yoshioka et al., the fine particles 9 are disposed in and least partially form an electron-emitting area, and electrons are emitted from the fine particles 9. The particles 9 are an electron-emitting area constituting part of an electron-emitting device, as described at col. 8, lines 62-64, and elements 1 and 2 are electrodes which constitute part of the electron-emitting device.²

According to Applicants' invention, on the other hand, metal oxide particles, and an insulating material layer including the particles (i.e., the SiO₂ layer), do not constitute or form an electron-emitting area. Indeed, nothing in Yoshioka et al. would teach or suggest an electron source comprising a substrate, an insulating material layer provided on the substrate, wherein the insulating material layer has a plurality of partially exposed metal oxide particles on its surface, and an electron-emitting material and an electrode connected with the electron-emitting material, wherein the electron-emitting material and electrode are disposed on the insulating material layer, as recited in Claim 1. Neither would anything in Yoshioka et al. teach or suggest an electron source comprising

2/ For the record, Applicants do not acquiesce to the Examiner's remarks set forth under the heading "Response to Arguments" on page 5 of the Office Action.

a substrate, an insulating material layer provided on the substrate, wherein the insulating material layer has a plurality of partially exposed metal oxide particles on its surface and a plurality of enclosed metal oxide particles, and an electron-emitting material and an electrode connected with the electron-emitting material, wherein the electron-emitting material and electrode are disposed on the insulating material layer, as recited in Claim 2. Thus, Yoshioka et al. does not prevent charge-up and diffusion of ions such as Na or K, in the same manner as is achieved in Applicants' invention.

For the foregoing reasons, it is believed that Claims 1 and 2 are clearly patentable over Yoshioka et al.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable over Yoshioka et al. for the same reasons as are those independent claims. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration or reconsideration, as the case may be, of the patentability of each on its own merits is respectfully requested.

This Amendment After Final Rejection is believed clearly to place this application in condition for allowance and its entry is therefore believed proper under 37 C.F.R. § 1.116. At the very least, it is believed that the cancellation of Claims 11-20, 23-26, 28 and 29 removes all issues relating to those claims. In any event, however, entry of this Amendment After Final Rejection, as an earnest effort to advance prosecution and reduce the number of issues, is respectfully requested. Should the Examiner believe that

issues remain outstanding, he is respectfully requested to contact Applicants' undersigned attorney in an effort to resolve such issues and advance the case to issue.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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